Thermal Printer User's Manual

2824
2844
3842

Zebra Technologies Corporation

User's Manual No. 980381-001 Rev. B

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FOREWORD

This manual provides installation and operation information for the 2824, 2844 and the 3842 series printers, manufactured by Zebra Technologies Corporation, Camarillo, California.

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TRADEMARKS

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LP 2824, TLP 2824, LP 2844, TLP 2844 and TLP 3842 Thermal Printers

CE

European Council Directive		Compliance to Standards	
89/336/EEC	EMC Directive	EN 55022-B 1998	RF Emissions control
	EMC Directive	EN 55024 1998	Immunity to Electro-magnetic Disturbances
92/31/EE	EMC Directive	EN 61000-3-2	Harmonic Emissions
92/31/EE	EMC Directive	EN 61000-3-3	Voltage Variation
	CB Scheme	EN 60950 1991 A1, A2, A3, A4	Safety

FCC - DECLARATION OF CONFORMITY:

FC

Models: LP 2824, TLP 2824, LP 2844, TLP 2844 and TLP 3842 conform to the following specification: FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109(a) Class B digital device

Supplemental Information:
This device complies with Part 15 of the FCC Rules. Operation is subject to the following Two Conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INDUSTRY CANADA NOTICE:

This device complies with Industry Canada ICS-003 class B requirements.
Cet equipement est conforme a l'ICS-003 classe B de la norm Industrielle Canadian

SHOCK HAZARD WARNING:

The printer and power supply should never be operated in a location where either one can get wet. Personal injury could result.

MEDIA AND RIBBON WARNING:

Always use high quality, approved labels, tags and ribbons. If adhesive backed labels are used that DO NOT lay flat on the backing liner, the exposed edges may stick to the label guides and rollers inside the printer, causing the label to peel off from the liner and jam the printer. Permanent damage to the print head may result if a non-approved ribbon is used as it may be wound incorrectly for the printer or contain chemicals corrosive to the print head. Approved supplies can be ordered from your dealer.

RELOADING HINT:

If labels or ribbon run out while printing, DO NOT turn the power switch OFF (0) while reloading or data loss may result. The printer automatically restarts after you load a new label or ribbon roll.

STATIC DISCHARGE:

The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the print head or electronic components used in this device. DO NOT TOUCH the print head or the electronic components under the top cover.

THERMAL PRINTING:

The print head becomes hot while printing. To protect from damaging the print head and risk of personal injury, avoid touching the print head. Use only the cleaning pen to perform maintenance.

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1
Installation and Operation

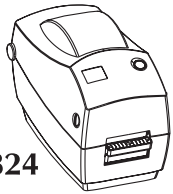
This section provides information on the installation and operation of the printer.

The printer is a low cost, desktop thermal printer. The printer is specifically designed for printing labels, tags or continuous receipts (with or without bar codes) from any DOS™, Windows™ or ASCII-based compatible host.

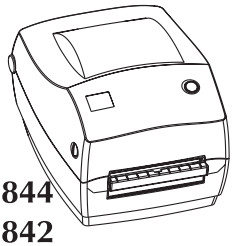
There are several models of printer. Many illustrations in this manual show the wide printer. While there are some physical differences among them, you can operate all printers using the same procedures.

Unpack Your Printer You have received one of these printers:

Direct thermal and thermal transfer printing

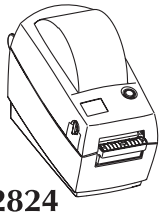


TLP 2824

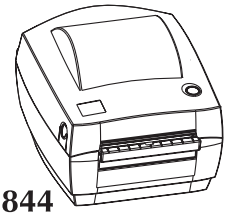


TLP 2844
TLP 3842

Direct thermal printing

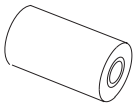


LP 2824
2" (50.8mm) *printing*

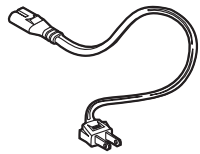


LP 2844
4" (101.6cm) *printing*

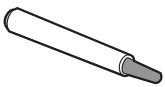
Additional Accessories:



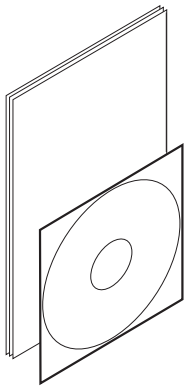
Sample Labels



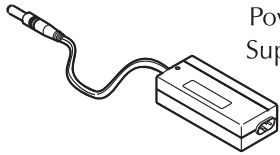
Power Cord



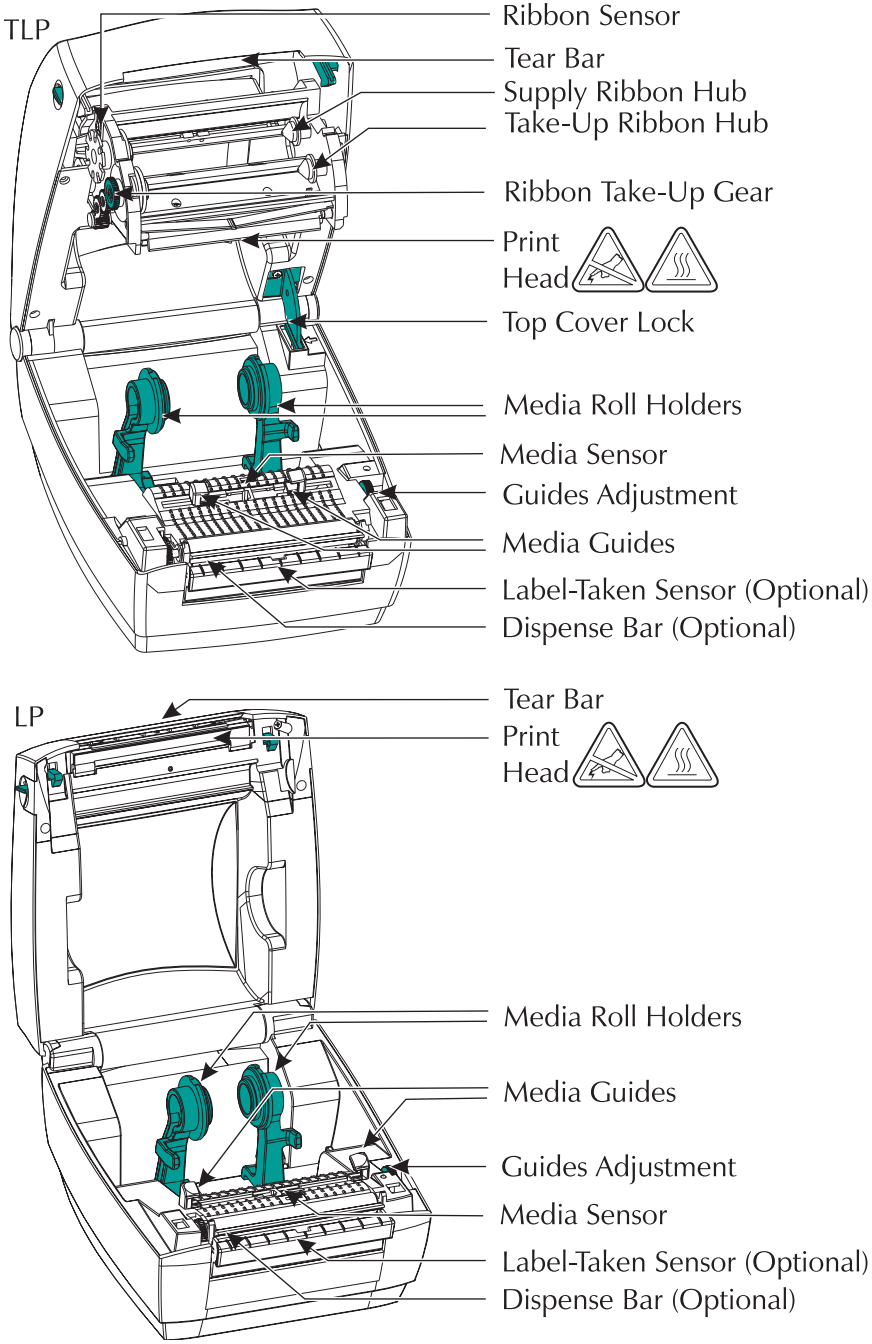
Cleaning Pen



Software and Documentation



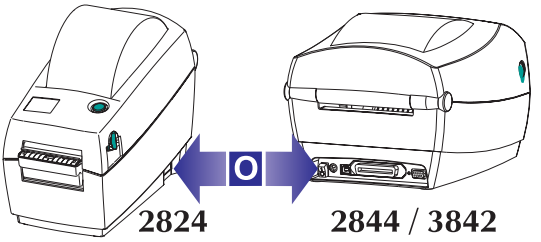
Power Supply


TLP
Ribbon Sensor
Tear Bar
Supply Ribbon Hub
Take-Up Ribbon Hub
Ribbon Take-Up Gear
Print Head
Top Cover Lock
Media Roll Holders
Media Sensor
Guides Adjustment
Media Guides
Label-Taken Sensor (Optional)
Dispense Bar (Optional)
LP
Tear Bar
Print Head
Media Roll Holders
Media Guides
Guides Adjustment
Media Sensor
Label-Taken Sensor (Optional)
Dispense Bar (Optional)

Installation The following steps will guide you through the installation of the printer and software.

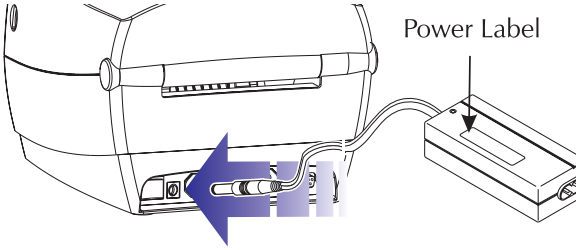
Step ❶ Attach Power Supply To The Printer

Power OFF

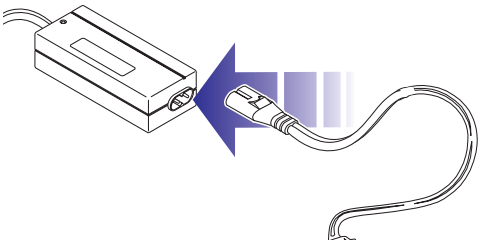


Check Voltage

Plug in Power Module



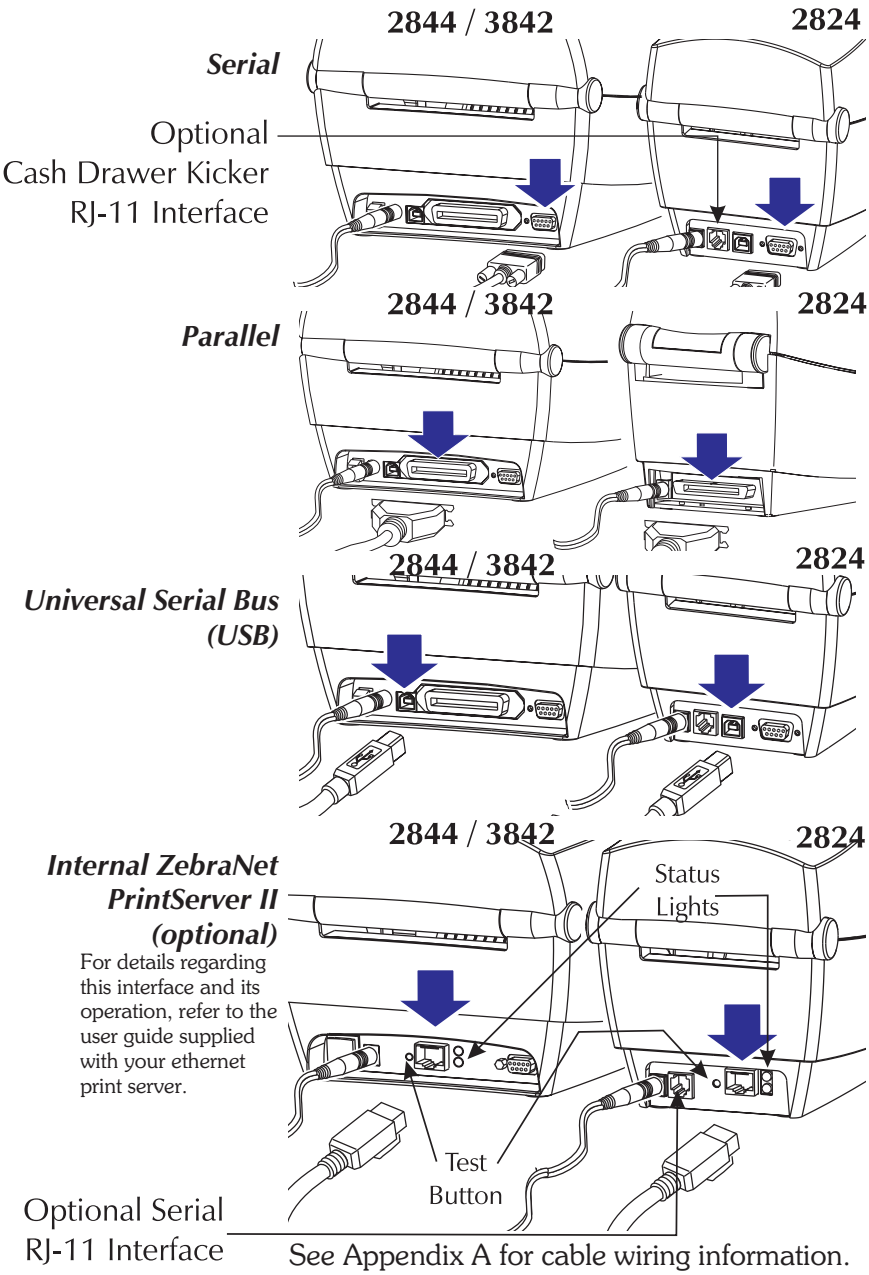
Plug in Power Cord



Plug Power Cord into a Suitable AC Outlet

See the SHOCK HAZARD WARNING on page iv.

Step ❷ Attach Interface Cable

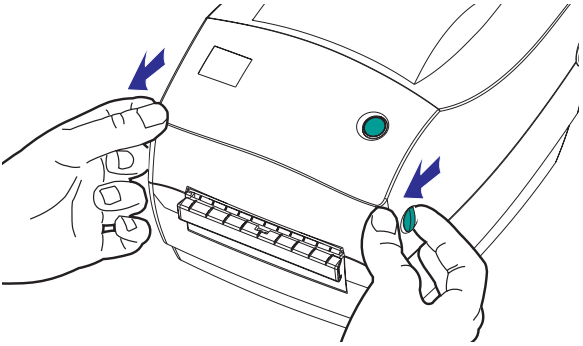


See Appendix A for cable wiring information.

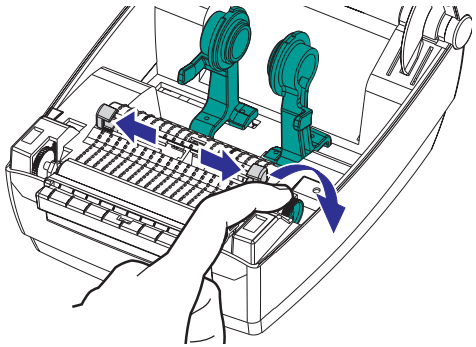
Step ❸ Load Media

Open Cover

LP Wide
LP Narrow
TLP Narrow



Open Guides

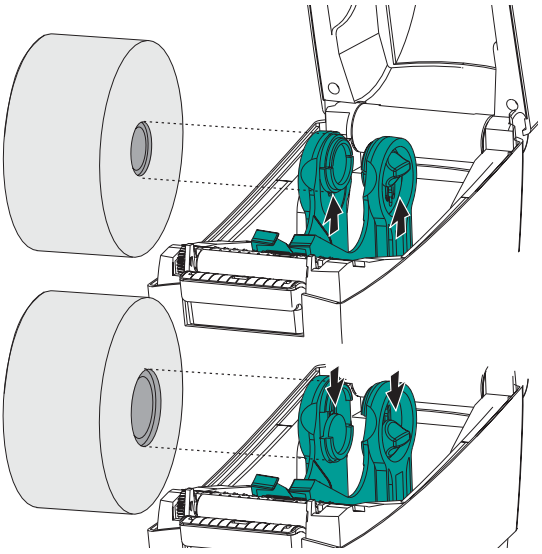


LP 2824

Adjust Holders
1.0 inch
2.5 cm

LP Narrow

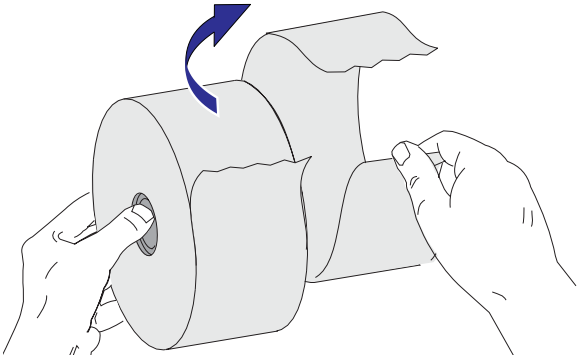
1.5 inch
3.8 cm



Load Media - continued

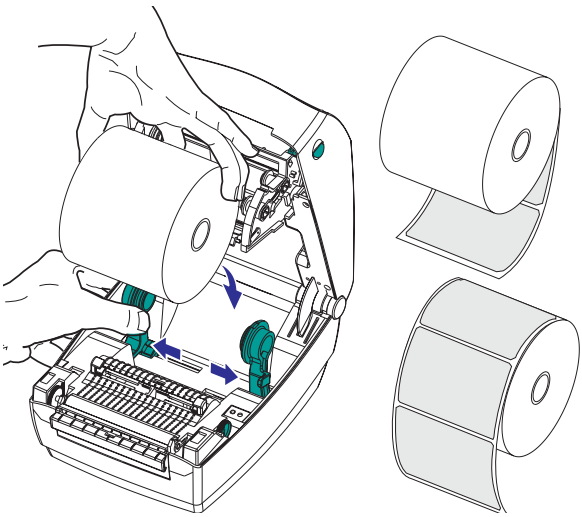
Remove the outside length of media

For more information on media preparation, refer to Appendix A.



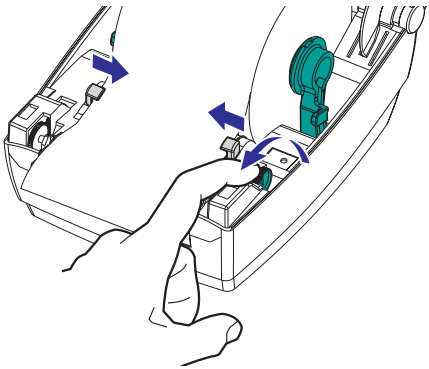
Install Roll

Note: Find the instructions for preparing media in Appendix A.



Close Guides to the Width of the Media

Note: When using linerfree labels, adjust the guides to the widest position

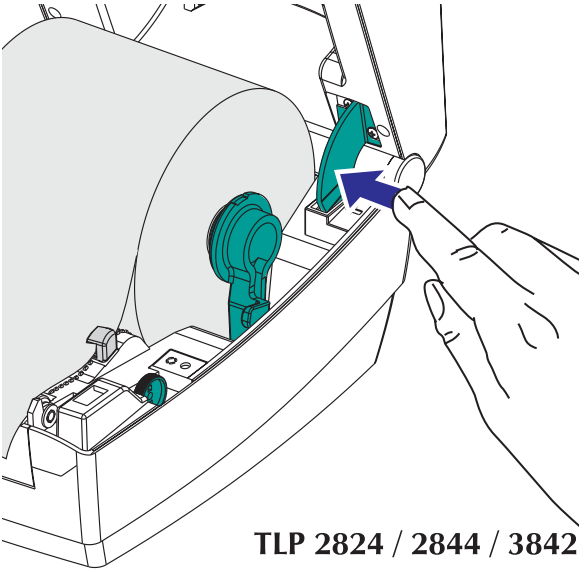


Load Media - continued

Release Cover

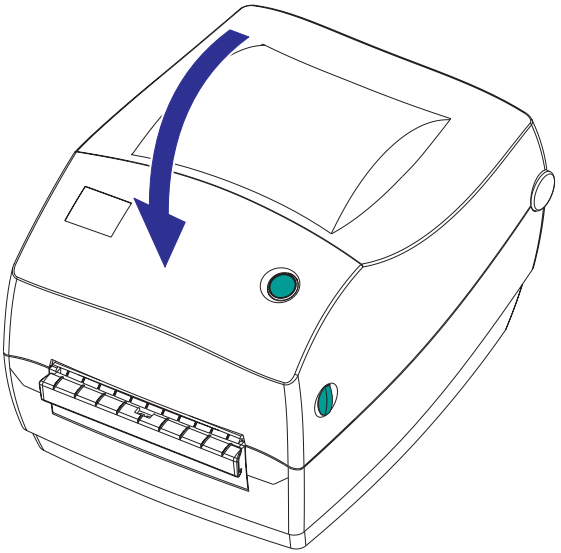
Note: This step applies to thermal transfer printers

TLP Wide
TLP Narrow



TLP 2824 / 2844 / 3842

Close Cover

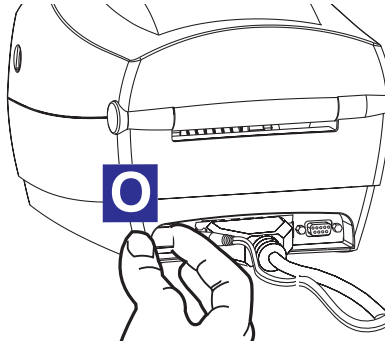


Step ❹ AutoSense Media Gap Sensing

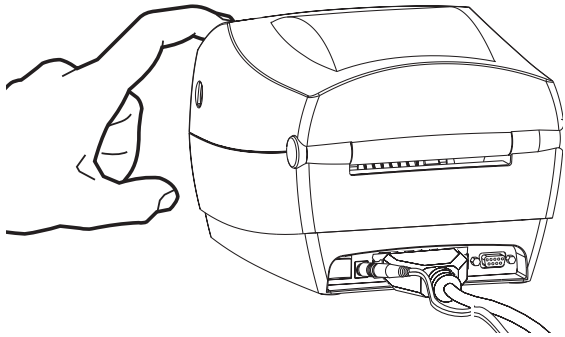
LP Wide
LP Narrow
TLP Narrow

Perform this procedure when loading a new roll. If your printer has the label dispenser option, turn OFF the label taken sensor.

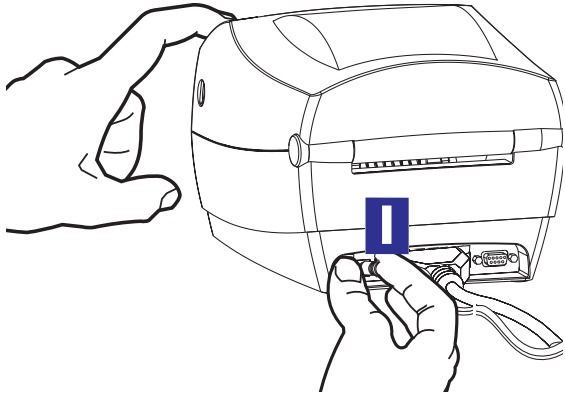
Power OFF



Hold Feed Button

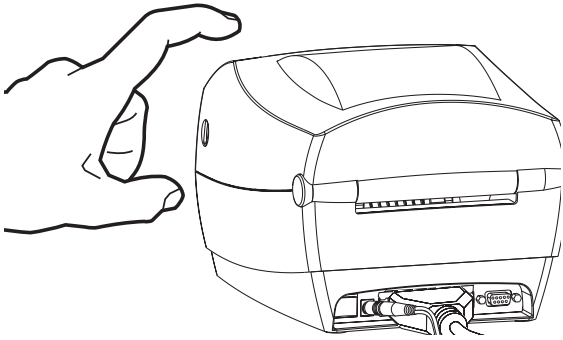


Power ON



AutoSense Gap Sensor Adjustment - continued

When Indicator Flashes, Release Feed Button



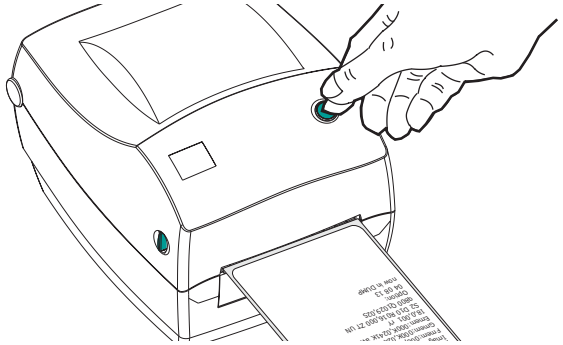
Printer Advances Media and Prints Status Summary

Note: Printer is in diagnostic dump mode

```
UKQ1935     16 V3.21
Serial port : 96,N,8,1
Image buffer size:1032K
Fmem:000.0K,016.4K avl
Gmem:000K,0593K avl
Emem:000K,0593K avl
I8,0,001  rY
S2 D10 R016,000 ZT UN
q800 Q01225,026
Option:
04 08 13
now in DUMP
```

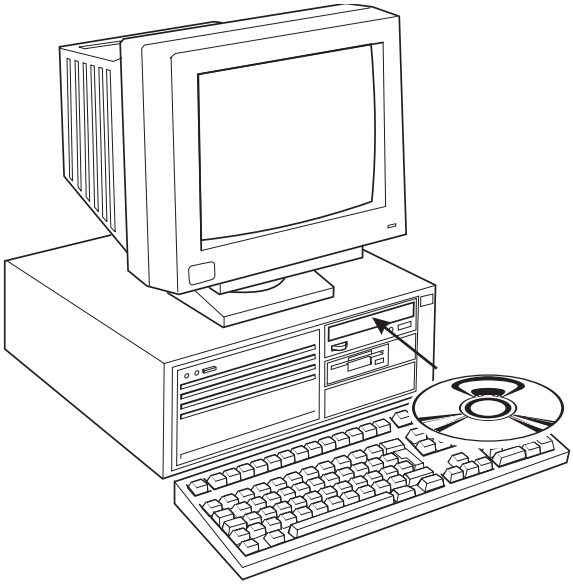
Tap Feed Button To Begin Normal Operation

Note: Printer prints "out of DUMP"



If the indicator remains orange or red, see the troubleshooting steps.

Step ❺ Install Software



Start your computer and follow the installation instructions on the compact disc (CD).

Operation

The following information helps you get the most from your printer.

Programming Commands

You must use programming to control many of the printer's functions. See the EPL2 programmer's manual for details. For example, the **Q** command controls form length and gap.

Printer Driver

The printer driver provides a convenient control to improve print quality. For example, Print density (darkness) is affected by the heat energy (density setting) applied and by the print speed. Changing both Print Speed and Density may be required to achieve the desired results.

Thermal Printing: Direct or Transfer?

You must use the correct media for the type of printing you require. When printing without a ribbon, you must use direct thermal media. When using ribbon, you must use thermal transfer media. The printer's ribbon sensor detects motion of the supply spindle.

Replacing Supplies

When replacing media or ribbon, do not turn off the printer or data loss occurs. The printer automatically resumes printing after you load new supplies.

2
Using Options

This section provides information on the printer's optional features:

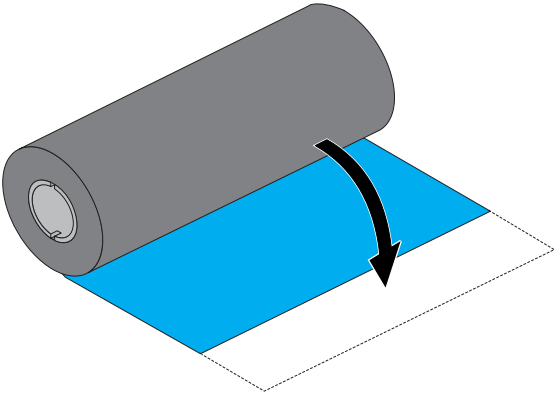
- thermal transfer printing
- label dispenser
- fan-fold media
- media cutter

Using Transfer Ribbon

The TLP printer supports both direct thermal media (chemically treated to darken when heated) and thermal transfer media (accepts wax and/or resin transferred off a ribbon).

Step ❶ Prepare Ribbon

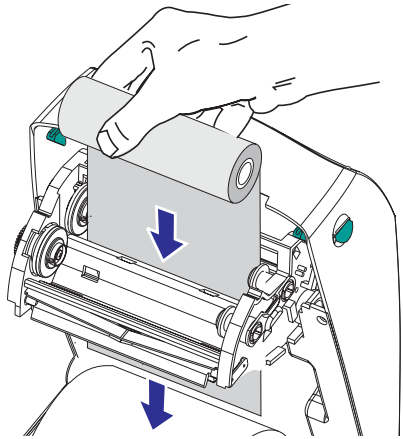
Pull Adhesive Strip Free



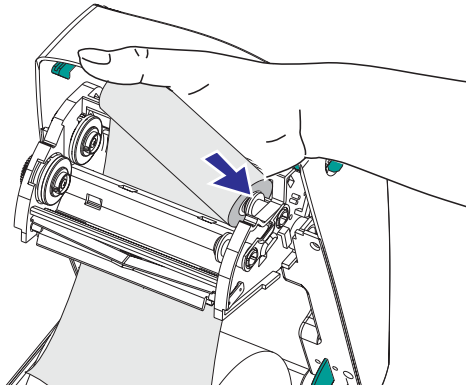
TLP Wide
TLP Narrow

Step ❷ Install Supply Roll

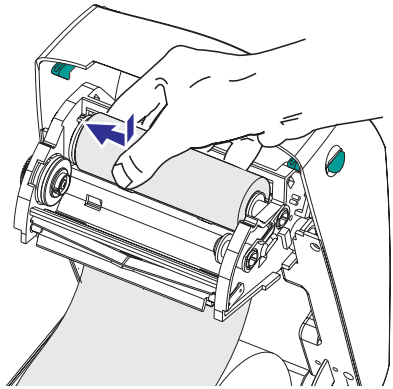
Thread Ribbon Through Carriage



Press onto Hub

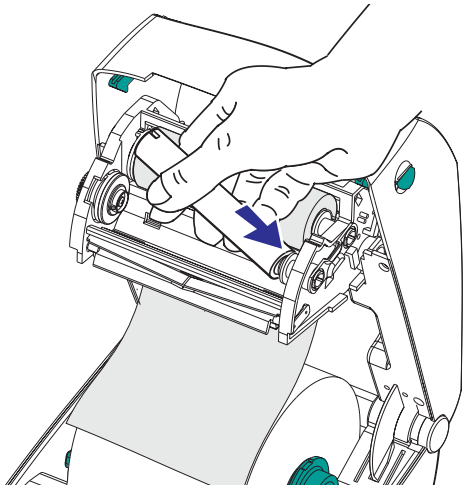


Align Notches onto Hub Spokes

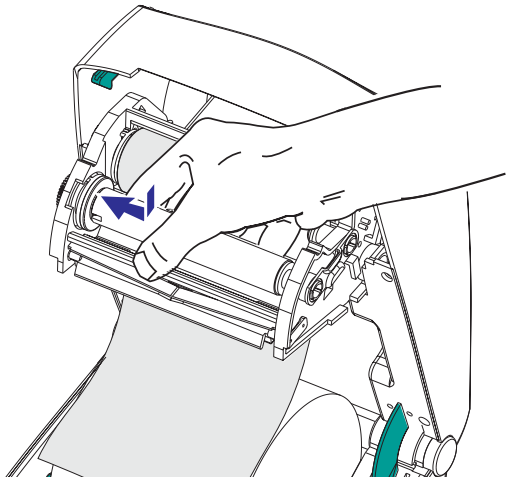


Step ❸ Install Take-Up Core

Press onto Hub

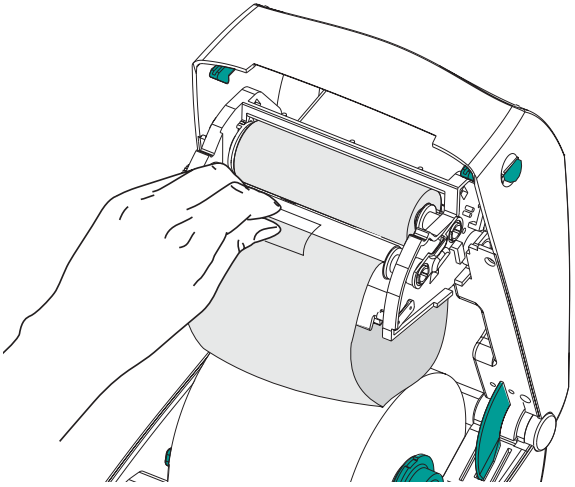


Align Notches onto Hub Spokes



Step ❹ Tighten Ribbon

Attach Ribbon to Take-Up Core

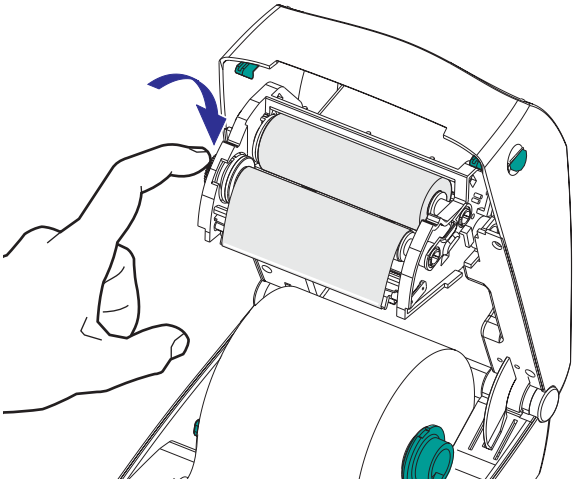


Notes:

Align ribbon so that it will be taken straight onto core.

Use the adhesive strip on new rolls; otherwise, use tape.

Remove Slack From Ribbon



When using ribbon, make sure you also use thermal transfer media.

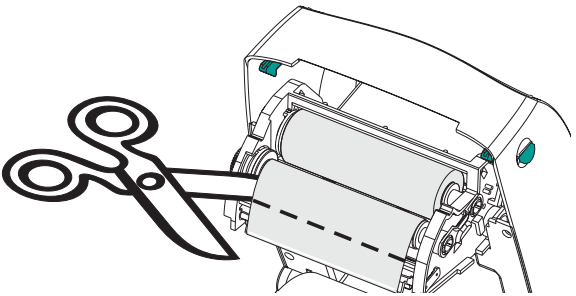
Adding a New Transfer Ribbon

If ribbon runs out in the middle of a print job, the indicator lights orange and the printer waits for you to add a fresh roll. Keep the power on as you change ribbon. Open the top cover, then cut the used ribbon so you can remove the cores. Load a new ribbon roll (refer to the previous procedure if necessary). Close the top cover. Press the Feed button to restart printing.

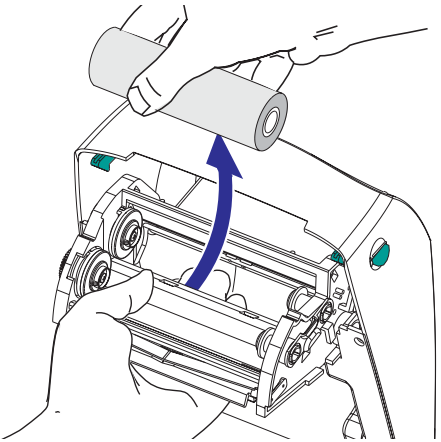
Replacing a Partially Used Transfer Ribbon

To remove used transfer ribbon, cut the ribbon from the take-up roll. Remove the take-up roll and discard used ribbon. Remove the supply roll and tape the end of any fresh ribbon to prevent it from unwrapping. When reinstalling a partially used supply roll, tape the cut end onto the empty take-up roll.

Cut Used Ribbon from Supply



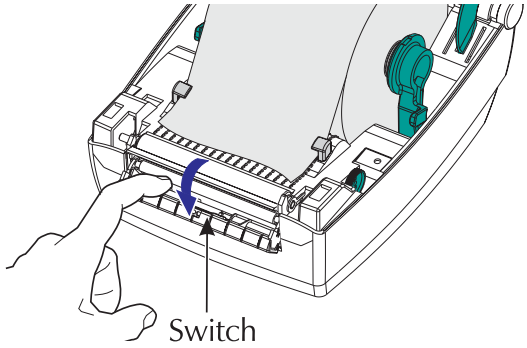
Push Supply Roll Out



Using the Label Dispenser

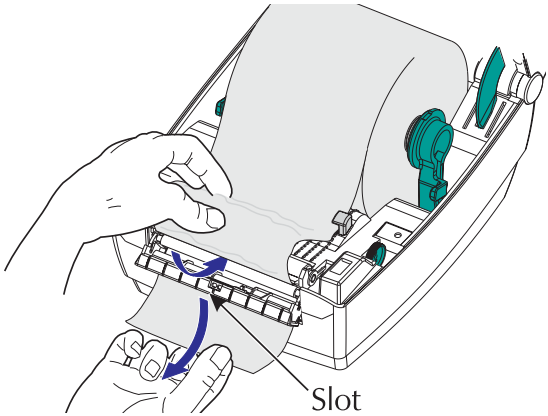
Open Door

Switch On the Label Taken Sensor



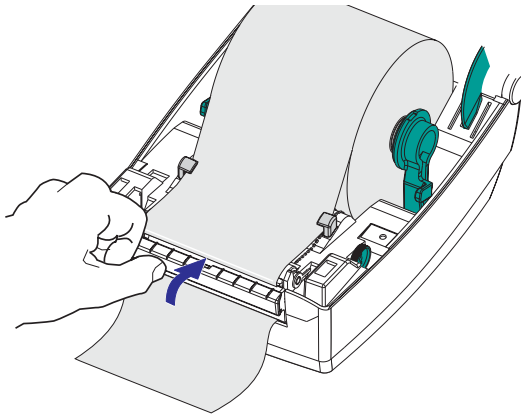
Remove Several Labels

Push Liner Through Slot



Close Door

Close Top Cover and Press Feed Button

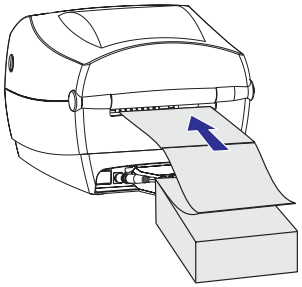


MOVIE

LP Wide
LP Narrow
TLP Narrow

Using Fan-Fold Media

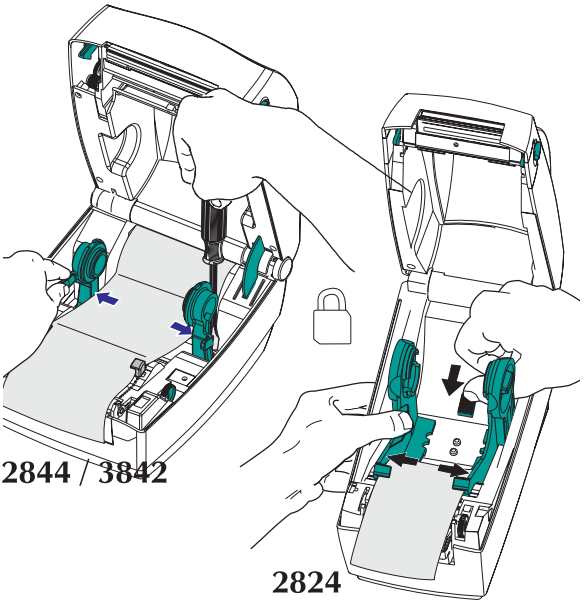
Insert Media



Adjust Holders to Width of Media

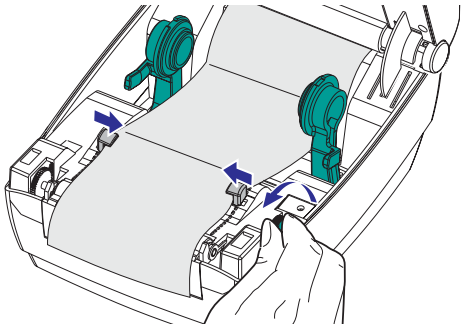
2844–Tighten Screw (use a small Phillips driver #1)

2824–Lock Guides in Place



2844 / 3842

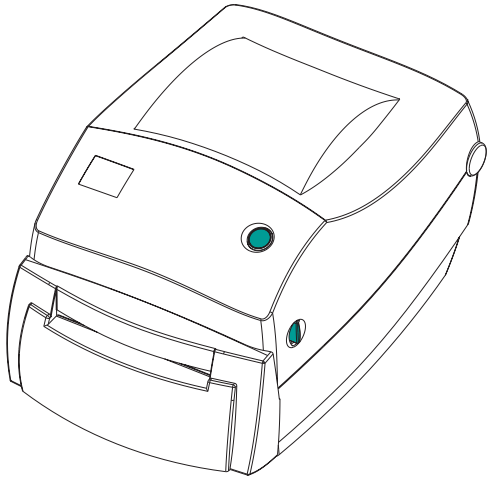
2824



Adjust Guides to Width of Media

Using the Media Cutter

Printers that have a bezel with a motorized blade can dispense one or more forms that are then automatically cut from the media supply.



This option cuts through continuous paper from rolls and liner between labels.

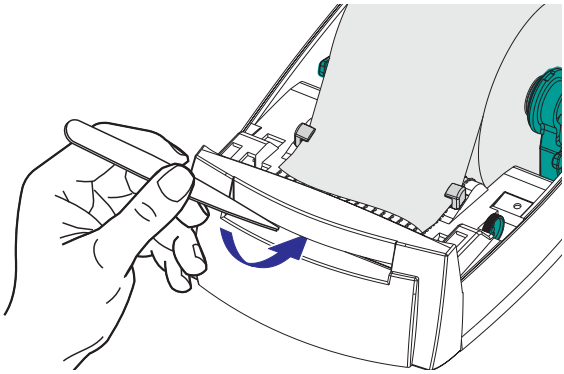
Use the **OC** command to activate the cutter and the **Q** command to set the form length and gap distance. See the EPL2 programmer's manual.

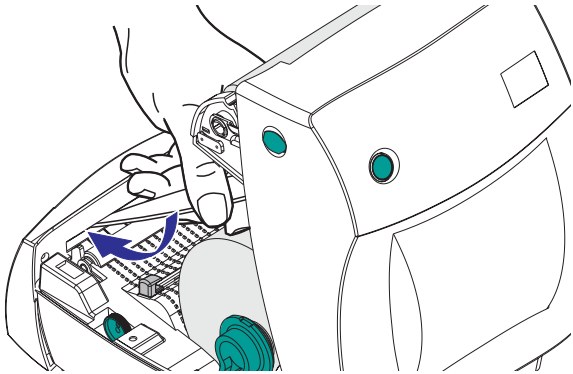
Clearing the Media Cutter

If the blade cuts through labels, adhesive can jam the cutter.

Turn OFF (O) printer power and unplug the power and interface cables before clearing the cutter.

Keep the cutter dry. Never use any solutions or solvents to clean the blade.





After removing debris, plug in the power and interface cables, turn on the printer, then test for normal operation.

Appendix

Troubleshooting

Problem	Solution or Reason
STATUS Indicator	
Does not light after turning ON (▮) printer.	1. Check power connections from A.C. outlet to power supply to printer. 2. Check that media or ribbon is present.
Lights ORANGE.	1. The optional cover open sensor is active. Press top cover to close and lock. 2. Printer has a syntax or command error. Check program and resend print job.
Blinks RED.	1. Firmware download in process. Indicator lights red, then green. 2. Signal to begin AutoSense after turning ON printer. Release the FEED button.
Lights RED.	1. Media or ribbon is out. Reload a new supply. 2. Power-up failure. 3. Printer ready to receive flash programming during firmware download.
Printer Operation	
Lights GREEN, but printer will not print.	1. Check interface cable connections from computer to printer. 2. Make sure top cover is locked closed. 3. Check that labels are correct. 4. Verify media has print surface up for printing. 5. Check that transfer ribbon is correctly routed and has the ink side out for thermal transfer printing.

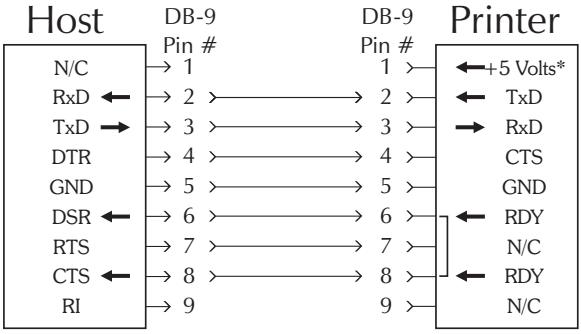
Problem	Solution or Reason
Printer Operation--continued	
Printer appears to be working (media is being fed out), but nothing is printed.	1. Verify that the labels are the correct type. 2. Check that the roll is loaded with the direct thermal side facing up. 3. Clean the print head with cleaning pen. 4. Ensure top cover is locked closed.
Printing is faded or poor quality.	1. Clean the print head with cleaning pen. 2. Adjust print speed/darkness in software. 3. Check the media and verify that print surface is facing up. 4. Check the correct combination thermal transfer ribbon and media are in use.
Prints only partial label or skips a label.	1. Perform AutoSense gap sensor adjustment on page 9. 2. Label caught on print head. 3. Top cover is not properly latched. 4. Possible software problem. Check the printer memory configuration. Refer to the EPL2 Programming manual.
Printing stops and STATUS indicator lights ORANGE or RED.	1. Perform AutoSense gap sensor adjustment on page 9. 2. Possible problem with label stock. Use only approved labels and tags. 3. Possible label jam. 4. Insufficient memory for label size. Check the printer memory configuration. 5. Possible software problem. Refer to the EPL2 Programming manual.

Troubleshooting Media Handling

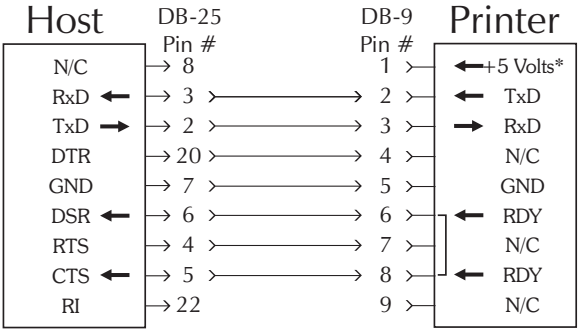
Problem	Solution or Reason
Ribbon Path	
Evident wrinkles result in diagonal stripes on printout.	1. Make sure ribbon mounts straight onto take-up core.
Label Dispenser	
Printing continues between labels.	1. Make sure label-taken sensor is on. 2. The label-taken sensor is blocked or dirty. Remove any scraps or dust. 3. Continuous media may be set. Verify form length setting through programming **Q** command. See the EPL2 programmer's manual.
Print one label and stops.	1. Verify the quantity has been correctly set.
Cutter Operation	
Blade cuts through labels instead of cutting liner between labels.	1. Verify form length setting through programming.
Media jammed in cutter.	1. Unplug power and interface cables. Use tweezers to remove scraps from cutter opening.
Media fails to cut direct thermal paper or label liner.	1. Use programming **C** command to cycle cutter several times without media to perform a self-cleaning. See the EPL2 programmer's manual. 2. Cutter must be replaced.

Serial Interface Cable Wiring

The figure below displays the cable wiring required to use the printer's RS-232 serial interface.



Female DB-9 to Male DB-9
Cable P/N 300017-006 (6') or 300017-010 (10')

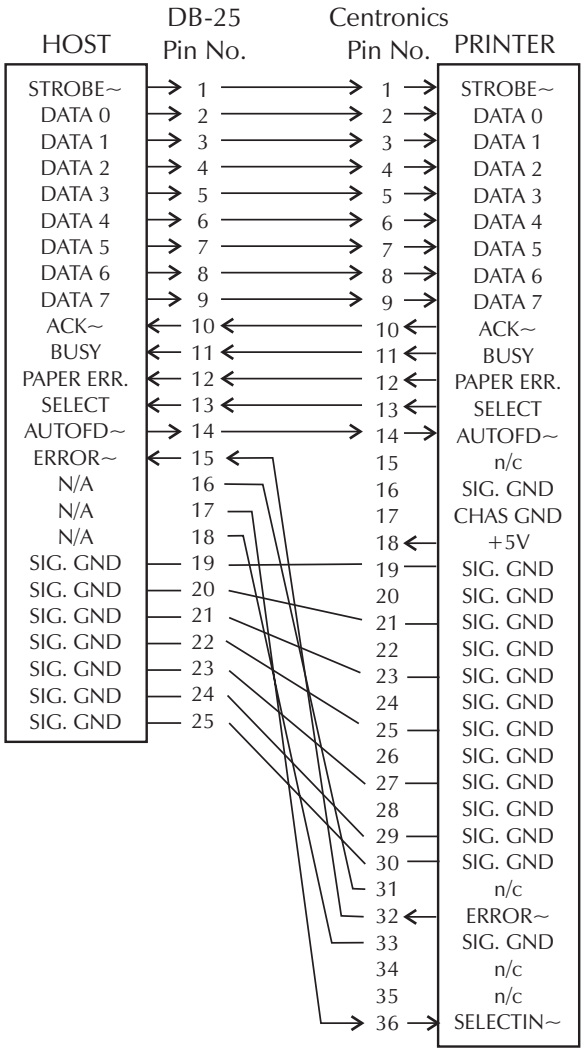


Female DB-25 to Male DB-9
Cable P/N 300018-006 (6')

*+5 volts at 150 mA for external device (e.g. KDU or scanner)

Parallel Interface Cable Wiring

The figure below displays the cable wiring required to use the printer's Centronics parallel interface.


HOST
DB-25 Pin No.
Centronics Pin No.
PRINTER
STROBE~ 1 1 STROBE~
DATA 0 2 2 DATA 0
DATA 1 3 3 DATA 1
DATA 2 4 4 DATA 2
DATA 3 5 5 DATA 3
DATA 4 6 6 DATA 4
DATA 5 7 7 DATA 5
DATA 6 8 8 DATA 6
DATA 7 9 9 DATA 7
ACK~ 10 10 ACK~
BUSY 11 11 BUSY
PAPER ERR. 12 12 PAPER ERR.
SELECT 13 13 SELECT
AUTOFD~ 14 14 AUTOFD~
ERROR~ 15 15 n/c
N/A 16 16 SIG. GND
N/A 17 17 CHAS GND
N/A 18 18 +5V
SIG. GND 19 19 SIG. GND
SIG. GND 20 20 SIG. GND
SIG. GND 21 21 SIG. GND
SIG. GND 22 22 SIG. GND
SIG. GND 23 23 SIG. GND
SIG. GND 24 24 SIG. GND
SIG. GND 25 25 SIG. GND
26 SIG. GND
27 SIG. GND
28 SIG. GND
29 SIG. GND
30 SIG. GND
31 n/c
32 ERROR~
33 SIG. GND
34 n/c
35 n/c
36 SELECTIN~

Male DB-25 to Male Centronics (Cable)

+5 volts at 300 mA for external device (e.g. KDU or scanner)

Universal Serial Bus (USB)

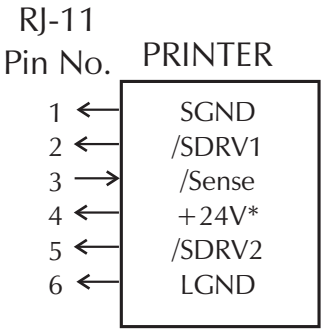
The table below provides the contact terminating assignments by number and electrical value for the cable connectors.

Contact Number	Signal Name	Typical Wiring Assignment
1	VBUS	Red
2	D-	White
3	D+	Green
4	GND	Black
Shell	Shield	Drain Wire

You can refer to the Universal Serial Bus Specification for details regarding this interface.

Cash Drawer Cable Wiring

The figure below displays the pin assignments for the printer's retail cash drawer interface. Refer to the cash draw manufacturer's documentation for proper drawer wiring.



Male RJ-11

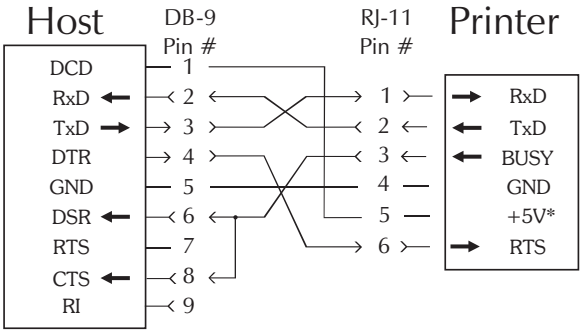
Internal ZebraNet PrintServer II (optional)

This interface uses an RJ-45 straight-through cable type. The table below provides the pinout assignments.

Signal	Pin	Pin	Signal
Tx+	1	1	Tx+
Tx-	2	2	Tx-
Rx+	3	3	Rx+
---	4	4	---
---	5	5	---
Rx-	6	6	Rx-
---	7	7	---
---	8	8	---

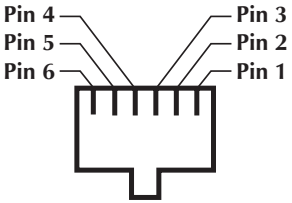
For details regarding this interface and its operation, refer to the user guide supplied with your ethernet print server.

Alternative Serial Interface Input The pinout of the RJ-11 interface connector is listed below.



Female DB-9 to RJ-11

***+5 volts @ 160 mA max.**



Front View of RJ-11 Modular Connector

Note that looking into the printer's connector with the key notch pointing down, pins are numbered from left to right.

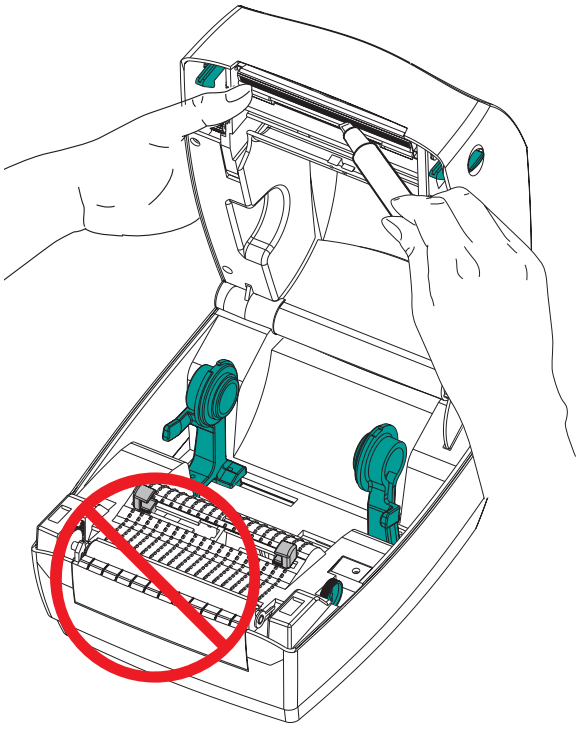
Cleaning the Printhead

When you load new media, you can also clean the printhead.

Turn OFF (O) the printer before performing this procedure.

Rub Cleaning Pen Across Dark Area of Print Head

Wait One Minute Before Closing Printer



Do Not Clean Roller With Cleaning Pen

LP Wide
LP Narrow
TLP Narrow

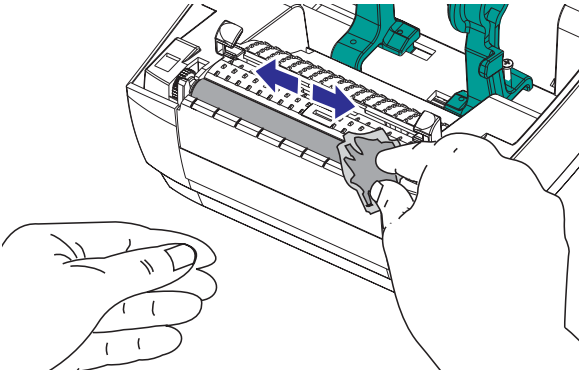
Cleaning the Platen

The platen, over time, picks up adhesive and dust which requires occasional cleaning.

To follow these steps, you require a clean, lint-free cloth lightly moistened with isopropyl alcohol.

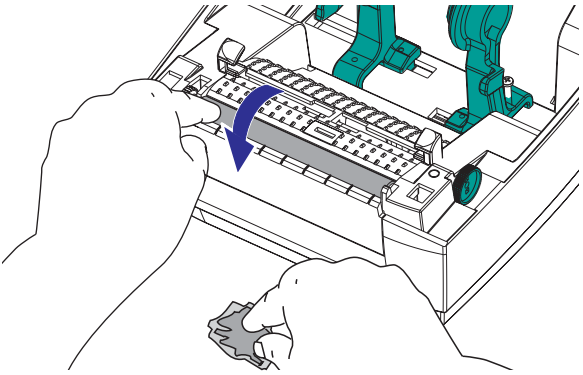
Turn OFF (O) the printer before performing this procedure.

Gently Wipe Top of Platen



Advance Platen One-Sixth (1/6) Turn (about 60°)

Repeat Steps Until Platen is Clean



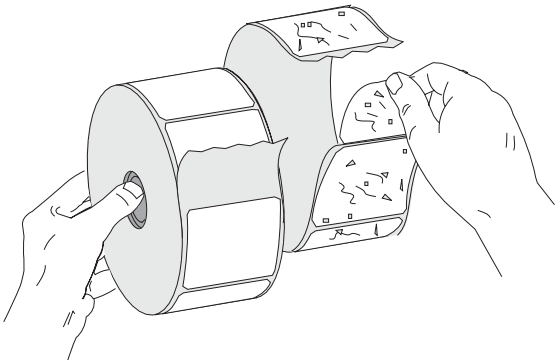
Let the platen dry for at least one minute before loading media.

Preparing Media, Paper, and Labels Before Loading

During shipment, the outside length of media may become dirty when handled or dusty when stored. A preparation before loading media makes sure both the print head and platen stay cleaner for more time.

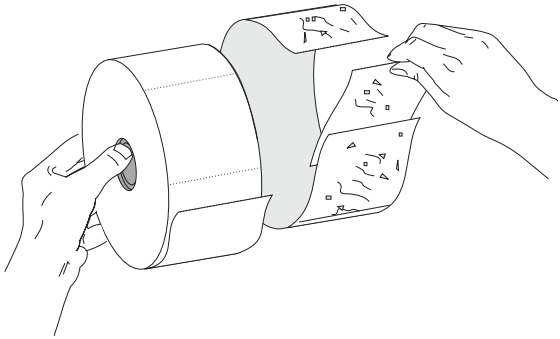
Label Rolls

Find the tape and pull off both labels held by the tape



Tag Stock Rolls

Find the tape and detach the bottom tag



You must avoid dragging adhesive or dirty media between the print head and platen. Such an occurrence damages the print head and is not covered under your warranty.

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